



---

# FEMP Assessment of Energy and Load Reduction Techniques (ALERT) FY 2004

Brad Gustafson

Federal Energy Management Program

202-586-5865

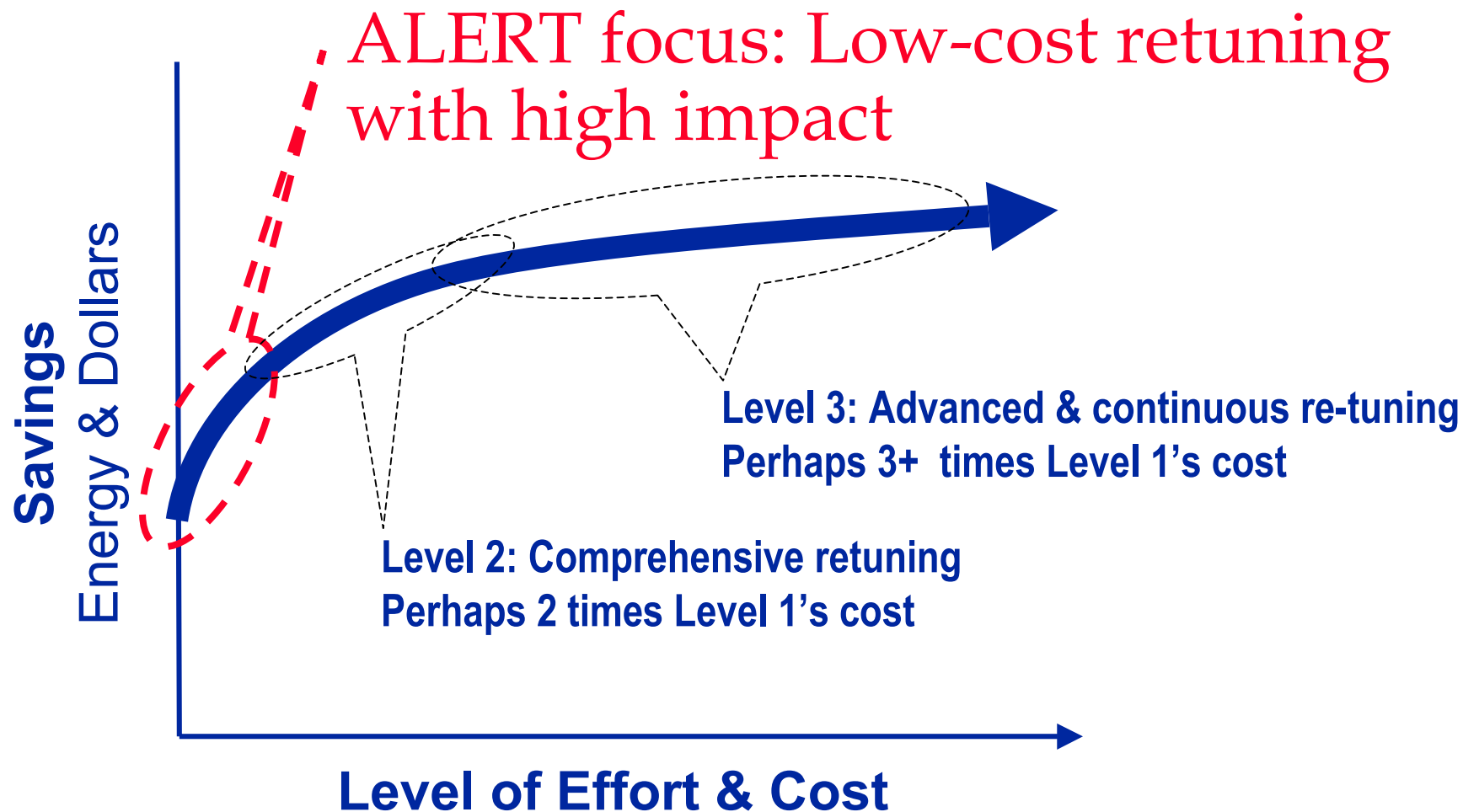
[Brad.Gustafson@ee.doe.gov](mailto:Brad.Gustafson@ee.doe.gov)

## *Overview of ALERT Program*

---

- ❑ ALERT: Assessment of Load and Energy Reduction Techniques to identify low-cost O&M improvements that will:
  - Reduce energy use and cost
  - Lead to more comprehensive projects

# Cost/Benefit Concept Chart



## *Examples of O&M Improvements*

---

- ❑ Revise operation schedule for central HVAC systems and fans.
- ❑ Check equipment operating efficiencies.
- ❑ Repair/replace motors, dampers, sensors and gauges.
- ❑ Clean heat exchanger coils and filters.
- ❑ Cycle air handler units.
- ❑ Balance air systems.

# *Natural Gas Market Dynamics*

---

Confluence of factors has led to a tightening in the demand and supply balance and record low levels of natural gas in storage.

- ❑ Demand for natural gas in the U.S. has been steadily rising over the past decade, fueled in part by the rapid growth in use of natural gas for electricity generation.
- ❑ Domestic production has declined since its peak in the mid-1970's.
- ❑ Imports from Canada, which the U.S. relies upon to fill the growing gap between domestic production and consumption, have plateaued, and exports of U.S. gas to Mexico have begun to grow.
- ❑ High demand for injection into storage is competing with demand by the industrial and electric power sectors, leading to greater volatility.



## ***FY04 ALERT Focus***

---

**Reduce natural gas consumption in two areas:**

- ☐ **Reduce electricity use and summer peak demand in regions that rely heavily on natural gas for electricity generation.**
- ☐ **Reduce natural gas consumption at Federal facilities for space and water heating and for process loads.**

# *State Dependence on Natural Gas for Generation*

---

State/Region	Statewide Electricity from NG
Rhode Island	98%
California	56%
Texas	49%
Louisiana	47%
Nevada	34%
Oklahoma	32%
Mississippi	32%
ISO New England	29%
New York	27%
Oregon	24%

# Natural Gas - Federal Consumption and Costs

---

FY	Billions of BTU	Cost Per MMBTU	Cost x 10 <sup>6</sup>
2001	110	\$7.26	\$796
2000	110	\$4.53	\$498
1999	119	\$3.88	\$463
1998	120	\$4.06	\$489

❖ If the cost of natural gas goes up by \$1, the annual cost to agencies increases roughly \$110 million.



## Site Selection / List of sites

---

- ☐ Largest NG consumers from GSA data base.
- ☐ Sites with ongoing activities.
- ☐ Agencies / sites expressing an interest.
- ☐ DEO Regional Office contacts.
- ☐ DESC 50 largest consumers of NG.

# Criteria for Site Selection

---

- ☐ Active project champion and management support
- ☐ Site has resources to participate in the assessment and implement the recommendations
- ☐ Large cooling load and reliance on NG for generation
- ☐ Large consumer of NG at site
- ☐ Agency pays utility bills
- ☐ Ability to cost share

## *FY01 Results*

---

- ❑ Assessed 25 federal sites in California ... estimated potential savings:
  - Demand - 9.1%
  - Consumption - 11%
  - Cost - 9.9%
- ❑ Several sites are implementing ALERT recommendations

# *Goal of ALERT Protocols*

---

- ❑ Goal of Protocols (a.k.a. checklists):
  - Guide qualified ALERT team members to rapidly and effectively capture large energy savings opportunities and reduce exposure to energy price volatility.
- ❑ Objectives of Protocol:
  - Focus on high impact low-cost/no-cost measures for the facility operation, rather than equipment replacements.
  - Provide flexible guidelines applicable for all US regions.

# *Site Interview Record*

---

- ❑ Part I: Informational Interview
  - Conducted by the Regional Office
  - Screening site
- ❑ Part II: Team Leader Interview
  - Conducted by the Team Leader
  - Setting expectations with the site
- ❑ Part III: Building Information
  - Conducted by the ALERT Team
  - Gathering the details (incl. Attachments 1 & 2)

# *Information Resources*

---

## ❑ Website

- Protocol details are downloadable at:  
<http://www.eere.energy.gov/femp/techassist/alert.html>

## ❑ Program Documents

- Report findings
- Protocols/Checklists and tool information
- Utility incentive summaries  
<http://pnnl-utilityrestructuring.pnl.gov/energymanagement/energymanagement.htm>

# *Access to FEMP Services*

- ❑ Technical Assistance
- ❑ Design Assistance
- ❑ ESPC, UESC
- ❑ ALERT



<b>Central:</b>	<b>Randy Jones</b>	<b>303-275-4814</b>
<b>Mid-Atlantic:</b>	<b>Claudia Marchione</b>	<b>215-656-6967</b>
<b>Midwest:</b>	<b>Melinda Latimer</b>	<b>312-886-8582</b>
<b>Northeast:</b>	<b>Paul King</b>	<b>617-565-9712</b>
<b>Southeast:</b>	<b>Doug Culbreth</b>	<b>919-782-5238</b>
<b>Western:</b>	<b>Cheri Sayer</b>	<b>206-553-7838</b>
<b>National:</b>	<b>Brad Gustafson</b>	<b>202-586-5865</b>

August 17-20, 2003